TECHNICAL PAPER INDEX

1.1.1—Quality Management

STRATEGIES FOR MEASUREMENT OF SERVICE QUALITY 2
John F. Early, Juran Institute, Inc., Wilton, CT
LCS: 710:00:800

CONTINUOUS VENDOR IMPROVEMENT—A PROVEN APPROACH 10
Stanley G. Johnson, GTE Service Corp., Lexington, KY
LCS: 351:40:548

APPLYING QUALITY METHODS: NON-MANUFACTURING AREAS 14
Gary J. Nader, James River Graphics, South Hadley, MA
LCS: 310:10:889

1.1.2—Statistics

ANALYSIS OF DESTRUCTIVE MEASURING SYSTEMS 22
Beryl Spiers, Quality and Productivity Improvement, Stelco Tech. Services Ltd.
Burlington, Ontario, Canada
LCS: 123:70:000

A D.O.E. NETWORK IN A MANUFACTURING OPERATION 28
John E. Chalmers, Frank X. Cantello, Uniroyal Goodrich Tire Co., Fort Wayne, IN
LCS: 320:00:400

EXPERIMENTAL DESIGN: A STRATEGY FOR IMPLEMENTATION 34
J.C. Young, Institute for Improvement in Quality and Productivity,
University of Waterloo, Waterloo, Ontario, Canada

1.1.3—Human Resources
Panel

THE ROLE OF THE UNION, MANAGEMENT, AND CONSULTANT IN A TOTAL QUALITY TRANSFORMATION EFFORT 41
Betty L. Bednarczyk, AFL/CIO/CLC, Minneapolis, MN
David P. Negus, Dominion Bridge, Winnipeg, Manitoba, Canada
John Persico, Process Management Inst. Inc., Bloomington, MN
LCS: 330:80:400

1.1.4—Automotive

IMPLEMENTING CONTINUOUS IMPROVEMENT 60
Gregory F. Gruska, The Third Generation, Inc., West Bloomfield, MI
LCS: 300:00:400

WE HAVE FOUND THE ENEMY, IT IS US! 65
Jim Warren, Rockwell International Automotive Operations, Troy, MI
LCS: 300:310

CHANGING TO COMPETE: AMERICAN INDUSTRY'S CHALLENGE 74
Jay T. Huston, Barber Consulting Resources, Inc., Muncie, IN
LCS: 300:00:437

1.1.5—Chemical & Process Industries and Customer-Supplier

QUALITY IN THE COMMUNITY—ONE CITY'S EXPERIENCE 78
George E.P. Box, Center for Quality and Productivity Improvement, Madison, WI
Sue Rohan, Madison Area Quality Improvement Network, Madison, WI
Laurel W. Joiner, Joiner Associates Inc., Madison, WI
F. Joseph Sensenbrenner, Mayor, Madison, WI
LCS: 310:90:993

1.1.6—Quality Auditing

MANUFACTURING SYSTEM AND PROCESS AUDITS 91
Jo M. Stravinskas, AT&T, Bridgewater, NJ
LCS: 345:70:400

QUALITY AUDITING MYTHMANAGEMENT 95
David D. Kildahl, Keith-Stevens Inc., Eden Prairie, MN
LCS: 345:70:400

AUDITING FOR CONTINUOUS IMPROVEMENT AT GM 99
Ronald G. Kingen, Packard Electronic, GMC, Warren, OH
LCS: 345:720:437

1.2.1—Quality Management

QUALITY OF ENGINEERING AND TECHNICAL SERVICES 103
Jonathan E. Emrick, VSE Corp., Alexandria, VA
LCS: 020:70:889

ACHIEVING QUALITY EXCELLENCE IN DEVELOPMENT 109
Eugene H. Melan, Marist College, Poughkeepsie, NY
LCS: 660:60:000

DEVELOPING A QUALITY PLAN AT A NATIONAL LABORATORY 117
Alvin H. Davis, Los Alamos National Lab., Los Alamos, NM
LCS: 310:10:900

1.2.2—Statistics

AN APPLICATION OF CPM TO THE TOOLWEAR PROBLEM 123
Fred A. Spiring, Department of Statistical and Actuarial Science,
University of Western Ontario, London, Ontario, Canada

COMBINED MEAN AND VARIANCE CONTROL CHARTS 129
Fah Fatt Gan, National University of Singapore, Department of Mathematics
Republic of Singapore
LCS 720:70:000

PROCESS PREDICTION WITH GEOMETRIC MOVING AVERAGES 140
Melvin T. Alexander, Christine Macklin, Westinghouse Electric Corp.,
Procurement Quality Engineering, Glen Burnie, MD
LCS: 110:70:000

1.2.3—Human Resources

MEASURING THE EFFECTIVENESS OF TEAM ACTIVITIES 149
Donald L. Dewar, Quality Circle Institute, Red Bluff, CA
LCS: 700:70:710

QUALITY INFORMATION SYSTEMS FOR *REAL* PEOPLE 155
Jill Phelps Kern, Digital Equipment Corp., Marlboro, MA
LCS: 020:90:400

IMPROVING QUALITY WITH AN INNOVATIVE BONUS SYSTEM 162
David Materne, Domino's Pizza Distribution Corp., Ann Arbor, MI
LCS: 343:10:000

1.2.4—Automotive

HONESTY WITHOUT FEAR 169
Theodore A. Lowe, Venture, Fraser, MI
Gerald M. McBean, National Technical Systems, Detroit, MI

DEFINE THE PROCESS: KEY TO CONTINUOUS IMPROVEMENT 178
Douglas L. Berg, Hydra-matic Div.—General Motors Corp., Ypsilanti, MI
LCS: 100:70:439

C I—IMPACT ON SUPPLIER REQUIREMENTS 184
Maureen S. Heaphy, The Transformation Network, Inc., West Bloomfield, MI
LCS: 300:10:400

1.2.5—Standards
Panel

MAKING USE OF ISO QUALITY STANDARDS IN AMERICA 189
Harrison M. Wadsworth, Georgia Institute of Tech., School of Industrial and Systems Engineering Atlanta, GA

INTERNATIONAL COMMERCE: THE ISO/TC 69 CONTRIBUTION 190
August B. Mundel, August B. Mundel, P.E., White Plains, NY
LCS: 000,100,200:00,40,70:000

SUGGESTING IMPROVEMENTS FOR ISO 9000 STANDARDS 191
Basilio V. Dagnino, Promon Tecnologia, S.A., Rio de Janeiro, RJ, Brazil
and Catholic University of Petropolis, Petropolis, RJ, Brazil
LCS: 020:10:439

1.2.6—Biomedical

REGULATORY SUBMISSION FOR NEW! IMPROVED! DEVICES 196
Richard P. Chiacchierini, Harry F. Bushar, Food and Drug Administration, Ctr. for Devices & Rad. Health, OST, Division of Biometric Sciences, Rockville, MD
LCS 521:70:991

QUALITY ASSURANCE'S ROLE IN START-UP VALIDATION WITH EMPHASIS ON THE BIOTECHNOLOGY INDUSTRY 201
Jean F. Huxsoll, Hanna Biologics, Inc., Alameda, CA
LCS: 310:10:450

1.2.7—Customer-Supplier

PROACTIVE VS. REACTIVE SUPPLIER AUDITS: MANAGING THE MIX 207
August H. Ziegler, Westinghouse Electric Corp., Baltimore, MD
LCS: 351:40:436

CUSTOMER SATISFACTION: THE FOCUS IS ON VALUE 213
John L. Pence, Bell Communications Research, Piscataway, NJ
LCS: 310:10:000

SUPPLIER DEVELOPMENT: MANAGING SUPPLIER QUALITY IN THE 1990s 218
Judith A. Baranowski, TRW Steering and Suspension Div., Sterling Heights, MI
Robert D. Fisher, Gregory N. York, TRW Steering and Suspension Div., Rogersville, TN
Harold E. Hempel III, TRW Ross Gear Div., Portland, MI
LCS: 351:40:400

2.1.1—Quality Management

WHY SHOULD WE GET EXCITED? 223
George L. Weir, Kaiser Aluminum—Newark Works, Newark, OH

NEW WAY OF MANAGEMENT TOOLS FOR CWQC 229
Hitoshi Kamikubo, Union of Japanese Scientists and Engineers, Tokyo, Japan
LCS: 640:90:000

QUALITY IMPROVEMENT IN THE OFFICE 235
Peter R. Scholtes, Lonnie S. Weiss, Sue Reynard, Joiner Associates Inc., Madison, WI
LCS: 600:10:800

2.1.2—Statistics
Panel

CONTROVERSIAL ASPECTS OF TAGUCHI METHODS: A PANEL DISCUSSION 244
Thomas B. Barker, Center for Quality and Applied Statistics, Rochester Institute of Tech. Rochester, NY
G.E.P. Box, Center for Quality and Productivity Improvement, University of Wisconsin-Madison Madison, WI
Raghu Kacker, National Institute of Standards and Tech., Gaithersburg, MD
Genichi Taguchi, American Supplier Inst., Dearborn, MI
LCS: 520:70:000

2.1.3—Human Resources

CREATIVE BLOCK-BUSTING 249
Amanda L. Schoonmaker, Schoonmaker Enterprises, Chesterfield, MO

CORPORATE TRAINING IN QUALITY AND SPC . . . GAMES PEOPLE PLAY 255
Todd G. Hudson, Productivity Sciences Inc., Northampton, MA
Frank C. Kaminsky, Department of Industrial Engineering and Operations Research, University of Massachusetts at Amherst, Amherst, MA
LCS: 323:10:000

SYSTEMATIC APPROACH TO SOLVING QUALITY PROBLEMS 260
Sadhan C. Chakravarty, Indian Statistical Institute, New Delhi, India
LCS: 320:70:000

2.1.4—Automotive

A POWERFUL NEW CONTROL CHART FOR JOB SHOPS 265
Davis R. Bothe, International Quality Institute, Inc., Northville, MI
LCS: 111:70:400

EXPERIMENTAL DESIGN: A CONTINUOUS IMPROVEMENT TOOL 271
John F. Van Gilder, AC-Rochester Division of General Motors Corp., Flint, MI
LCS: 520:70:432

COMPUTER SEARCH FOR THE IDEAL HISTOGRAM 277
Archibald Jamieson, Jamieson Management Services, St. Catharines, Ontario, Canada
LCS: 130:70:000

2.1.5—Software Quality Panel

PUTTING SOFTWARE QUALITY IN PRACTICE 284
H.T. Daughtrey, Babcock & Wilcox, Lynchburg, VA
LCS: 640:70:000

SOFTWARE QUALITY STANDARDS: USE AND DEVELOPMENT 285
Ronald L. Braun, Bell Communications Research, Piscataway, NJ

THE ROLE OF SQAM IN IMPROVING QUALITY COST RESIDUALS 292
Gerald E. Murine, Metriqs, Incorporated, Carlsbad, CA

SELECTING SUPPLIERS FOR NEW SOFTWARE SYSTEMS 299
Ardwin S. Libman, Bell Communications Research, Piscataway, NJ

2.1.6—Quality Costs

COST OF QUALITY AS A BUSINESS TOOL: AN EXAMPLE 306
Kenneth Vlach, Ronald Slahetka, Xerox Corp., Rochester, NY
LCS: 353:70:439

CAN QUALITY COST DIMENSION CUSTOMER SATISFACTION?.....312
Caroline Bolton, General Motors Corp., Lansing, MI
William O. Winchell, Alfred University, Alfred, NY
LCS: 020:10:400

MEASURING EXTERNAL FAILURE: THE FOUR COSTS OF EXTERNAL FAILURE.....317
David M. Dilts, Grant W. Russell, University of Waterloo, Waterloo, Ontario, Canada
LCS: 353:30:000

2.1.7—Construction

QUALITY IN THE DESIGN-CONSTRUCTION INDUSTRY 323
Norris Stubbs, Charles Sikorsky, Department of Civil Engineering, Texas A&M University College Station, TX
LCS: 300:70:300

CONSTRUCTION QUALITY, AN INSTITUTE.....333
Roger D. Hart, Roger D. Hart Associates, Hopedale, MA
LCS: 310:70:300

HOW TO ENSURE FASTENING QUALITY ON THE CONSTRUCTION SITE 339
Wilfried Imelmann, Hilti Befestigungstechnik AG, Schaan
LCS: 020:70:300

2.2.1—Quality Management
Panel

QIP-FPL'S CONTINUOUS IMPROVEMENT PROCESS 347
Eric D. Dmytrow, Vicki N. Amon, Brendan M. Collins, Florida Power & Light, Juno Beach, FL
Roger A. Ward, Florida Power & Light, Miami, FL
LCS: 300:10:549

2.2.2—Textile & Needle Trades

GAINING A COMPETITIVE EDGE WITH TOP QUALITY SIZING 371
Carol J. Salusso-Deonier, Dept. of Health and Human Development, Montana State University Bozeman, MT
LCS: 680:20:423

IMPROVING GARMENT FIT—A CHALLENGE FOR INDUSTRY 377
Karen L. LaBat, Minneapolis College of Art and Design, Minneapolis, MN

IMPACT OF TECHNOLOGIES ON THE QUALITY OF APPAREL.....383
Donna M.J. Albrecht, University of Wisconsin-Stout, Menomonie, WI
LCS: 020:70:423

2.2.3—Potpourri

Q/A LAWYER TEAMWORK IN LIABILITY PREVENTION 391
William N. Ling, Ling Management Development, Inc., Elmore, OH
Bradley A. Hasten, Products Liability, Owens Corning Fiberglas, Toledo, OH
LCS: 354:70:000

INTERNAL COMPETITION—THREAT TO IMPROVEMENT EFFORTS 396
Melissa J. Jones, Hunter House, Santa Clara, CA
LCS: 310:80:000

SOFTWARE REQUIREMENTS, QUALITY AND CHANGE 402
Carl A. Singer, Bell Communications Research, Piscataway, NJ
LCS: 640

2.2.4—Automotive

QUALITY IMPROVEMENT THROUGH PREVENTIVE MAINTENANCE 408
Henning Kirstein, Volkswagen AG, West Germany
LCS: 342:70:437

QUALITY IMPROVEMENT ROUND II: SPC or SPS? 416
H.J. Bajaria, Multiface, Inc., Garden City, MI
LCS: 300:70:000

AN EXPERT SYSTEM FOR GENERIC QUALITY IMPROVEMENT 424
William Winchell, Navin Chugh, School of Engineering, Alfred University, Alfred, NY
LCS: 020:70:000

2.2.5—Software Quality

QFD—A SYSTEMATIC APPROACH TO PRODUCT DEFINITION 428
Dianne M.M. Thompson, M. Hosein Fallah, AT&T Bell Laboratories, Holmdel, NJ
LCS: 020:90:000

SOFTWARE PROBLEM FORECASTING—A TOOL FOR SQA MANAGEMENT 433
Paul S. Murray, Sun Microsystems, Inc., Billerica, MA
LCS: 660:60:436

SHEWHART CHARTS IN SOFTWARE DEVELOPMENT 439
Daniel R. Stott, Data Systems Assurance, IBM Corp., Kingston, NY
LCS: 110:70:099

2.2.6—Quality Costs
Tutorial

QUALITY COST ANALYSIS—QA VS. ACCOUNTING 444
Richard K. Dobbins, Dobbins Management Consulting, Hatboro, PA
F.X. Brown, Westinghouse Electric Corp., Pittsburgh, PA
LCS: 353:10:000

2.2.7—International

A STUDY OF QC METHODS IN VARIOUS COUNTRIES 460
Jens J. Dahlgaard, The Aarhus School of Business, Denmark
LCS: 343:10:400

THE CUSTOMER AND PRODUCT INTEGRITY, AN EXERCISE IN RISK MINIMIZATION 466
Robert M. McRobb, Consultant, Colmworth, Bedford, England
LCS: 630:50:653

FILIPINO L-M COOPERATION AND QUALITY PRACTICE 470
Miflora M. Gatchalian, Quality Consultants International, Inc.,
Phil. Center for Economic Dev., Diliman, Quezon City, Philippines
Jose C. Gatchalian, School of Labor and Industrial Relations,
University of the Philippines, Diliman, Quezon City, Philippines
LCS: 680:80:439

2.3.1—Quality Management

HOSHIN PLANNING, THE FOUNDATION OF TOTAL QUALITY MANAGEMENT 476
Robert E. King, GOAL/QPC, Methuen, MA
LCS: 300:10:300

THE SERVICEABILITY ANALYSIS 481
William F. Houser, Tenneco Inc., Houston, TX
LCS: 310:50:437

FMEA FOR PROCESS QUALITY PLANNING 484
Paul E. Plsek, Paul E. Plsek & Associates, Little Silver, NJ
LCS: 660:70:800

2.3.2—Statistics

STATISTICAL TOLERANCING: METHODS TO IMPROVE QUALITY 490
Anne M. Barker, Rochester Institute of Technology, Rochester, NY
LCS: 122:60:400

COMPUTING WITH THE GAUSSIAN DISTRIBUTION: A SURVEY OF ALGORITHMS 496
G. Allen Pugh, Dept. of Engineering, Purdue University at Fort Wayne, IN
LCS: 420:60:000

CASE STUDY: USE OF THE TAGUCHI LOSS FUNCTION 502
Owen W. Miller, Kuo-Chong Chou, C. Alec Chang, Department of Industrial Engineering, University of Missouri-Columbia, Columbia, MO
LCS: 353:70:438

2.3.3—Energy

QUALITY IMPROVEMENT PLANS FOR NUCLEAR COMPONENTS 509
Bhisham K. Beri, Atomic Energy of Canada Ltd., Mississauga, Ontario, Canada
LCS: 030:60:434

EXPANDING ASQC SUPPORT OF THE QUALITY PROFESSION.....516
Raymond S. Markowski, GPU Nuclear Corp., Parsippany, NJ
LCS: 324:10:549

ASSESSMENT PROGRAM FOR ENGINEERING CAPABILITIES 521
Michael A. Verderosa, Long Island Lighting Co., Central Islip, NY

2.3.4—Reliability

SOFTWARE FOR USE OF EXPERT OPINION IN RELIABILITY.....527
Khalid Aboura, Nozer D. Singpurwalla, Refik Soyer
The George Washington University, Washington, DC
LCS: 840:60:000

UNIQUE APPROACH TO QUALITY TRAINING FOR THE '90s 533
Vyasaraj V. Murthy, Digital Equipment Corp., Andover, MA
LCS: 812:80:436

IS FAILURE RATE CONSTANT FOR A COMPLEX SYSTEM? 538
James A. McLinn, McLinn, Dale and Associates, Minneapolis, MN
LCS: 800:60:438

2.3.5—Software Quality

CULTURE SHOCK: IMPROVING SOFTWARE QUALITY 546
Kent de Jong, Sharon L. Trauth, Sandia National Laboratories, Albuquerque, NM

SOFTWARE QUALITY AUDITS 552
Nick P. Stewart, Satellite & Space Electronics Div., Rockwell International, Seal Beach, CA
LCS: 640:60:099

SOFTWARE QUALITY (FUNCTION) DEPLOYMENT 558
Richard E. Zultner, Zultner & Company, Princeton, NJ
LCS: 020:60:000

2.3.6—Aviation, Space & Defense

QUALITY ASSURANCE AND THE SECOND SOURCE CONTRACTOR 564
Malcolm D. Stroad, Raytheon Missile Systems Div., Bristol, TN
LCS: 310:70:419

DOD'S DRIVE TO ADOPT TQM; BARRIERS TO SUCCESS 569
Richard A. Stimson, Advanced Technology, Inc., Emhart Corp., Reston, VA
LCS: 310:10:991

"PAPER-LITE" NONCONFORMANCE TRACKING SYSTEM 575
John I. Coleman, Jeanne E. Applegate, Douglas Aircraft Co., Long Beach, CA
LCS: 341:70:545

2.3.7—International

QUALITY CONTROL IS THE WAY OF THINKING OF QUALITY ASSURANCE 580
G.K. Kanji, K. Searstone, Dept. of Applied Statistics & OR., Sheffield City Polytechnic
Sheffield, England
LCS: 300:320

THE SCANDINAVIAN QUALITY MANAGEMENT MODEL OF THE 1990s 588
Claes C. Agerup, HNG, Copenhagen, Denmark
Niels Nielsen, SVC, Brondby, Denmark
LCS: 300:70:500

A NEW DIAGNOSIS THEORY WITH TWO KINDS OF QUALITY 594
Gongxu Zhang, Research Institute of Management Science,
Beijing University of Science & Technology, Beijing, China
LCS: 100:70:099

2.4.1—Quality Management

CONTINUOUS IMPROVEMENT TO MEET CUSTOMER NEEDS 600
Charles A. Aubrey II, Banc One Corp., Columbus, OH
LCS: 310:10:800

CREATING A CUSTOMER-CENTERED CULTURE IN A SERVICE ENVIRONMENT.....607
Robin L. Lawton, Innovative Management Technologies, Inc.
Minnetonka, MN
LCS: 020:00:800

ASSESSING TOTAL QUALITY 614
Marc L. Spaulding, ODI, Burlington, MA
LCS: 310:10:000

2.4.2—Statistics

USING PREFERRED COLUMNS TO DESIGN EXPERIMENTS 619
Jerry L. Roslund, Saturn Corp., Troy, MI
LCS: 522:70:882

THINKING ABOUT SAFETY 625
Kevin Little, Joiner Associates Inc., Madison, WI
LCS: 600:10:000

DEMING AND CORPORATE STRATEGY 632
Mark Shal, Process Management Institute, Inc., Bloomington, MN
LCS: 610:10:000

2.4.3—Inspection

SOME STATISTICAL CONTROL TECHNIQUES FOR JOB SHOPS 638
Hardy M. Cook Jr., Consultant, Baltimore, MD
LCS: 100:70:000

QUALITY INTELLIGENCE: THE MISSING LINK IN CAD/CAM 643
Chris Garcia, Valisys Corp., Santa Clara, CA
LCS: 760:70:433

THE ELECTRONIC POISSON.....648
Gary M. Glenn, Glenn Consulting, Virginia Beach, VA
LCS: 420:70:000

2.4.4—Chemical & Process Industries

CONTINUOUS IMPROVEMENT THROUGH COOPERATION AND SPC 655
Jin U. Chung, Scott Paper Co., Everett, WA
Roger W. Hoerl, Scott Paper Co., Philadelphia, PA
LCS: 650:70:426

ALTERNATIVES WHEN SHEWHART CHARTS DON'T FIT 661
Stephen J. Caffrey, Michael W. Dupin, Stanley H. Gabel, Mark R. Kurzen, Robert M. Meisel
Eastman Kodak Co., Rochester, NY
LCS: 111:70:400

CAPABILITY INDEX—ENOUGH FOR PROCESS INDUSTRIES? 670
John T. Herman, E.I. du Pont de Nemours & Co., Inc., Old Hickory, TN
LCS: 344:70:428

2.4.5—Quality Management

PRODUCT CONTROL THROUGH PROCESS CONTROL AND PROCESS DESIGN 676
T.O. Duyck, Northern Telecom, Mississauga, Ontario, Canada
LCS: 300:70:436

QUALITY AS A DRIVER OF PROFITABILITY 682
William J. McCabe, IBM Corp., Kingston, NY
LCS: 020:10:000

APPLICATION OF QUALITY MANAGEMENT IN THE COMMUNITY 688
Victor R. Dingus, Tennessee Eastman Co., Eastman Chemicals Div.,
Eastman Kodak Co., Kingsport, TN
LCS: 310:70:993

2.4.6—Aviation, Space & Defense

THE QUALITY INITIATIVE IN AMERICAN EDUCATION 694
Frank Caplan, Quality Services Inc., Smithtown, NY
LCS: 320:00:000

A QUALITY DATA SYSTEM ACHIEVES TQM & COMPANY GOALS 700
Robert L. Getty, Charles E. Davis Jr., Bell Helicopter Textron, Inc., Fort Worth, TX
LCS: 353:70:545

THE CUSTOMER—IS HE REALLY KING? 706
Frank C. Collins Jr., Frank Collins Associates Survival Twenty-One, Alexandria, VA
LCS: 350:10:351

2.4.7—Electronics

TAGUCHI METHOD OPTIMIZATION OF A SENSOR SYSTEM 710
Richard B. Dingwall, Martin J. Duell, Xerox Corporation, Rochester, NY
LCS: 520:70:400

SPC—A PREREQUISITE TO TOMORROW'S TECHNOLOGY 719
Harlan C. Cramer, Susan P. Spurgeon, Westinghouse Electric Corp., Baltimore, MD
LCS: 100:20:436

DESIGNING COST-EFFECTIVE PRODUCTS 725
Janet D. Fiero, Improving Engineering Effectiveness, Inc., Scottsdale, AZ
William A. Birch, Motorola Inc., Mesa, AZ
LCS: 660:60:436

3.1.1—Quality Management

CONTROL CHARTS IN THE BOARD ROOM 731
William J. Latzko, Latzko Associates, North Bergen, NJ
LCS: 100:10:000

QUALITY ACHIEVEMENT OBJECTIVE PROCESS 737
Terri L. Marts, Westinghouse Electric Corp., Electro-Mechanical Div.
Cheswick, PA
LCS: 310:10:436

HOW TO WRITE A QUALITY PROCEDURE 743
Barbara F. Lynch, LTV Aircraft Products Group, Dallas, TX
LCS: 342:70:000

3.1.2—Statistics

THE VALUE OF PRE-EXPERIMENT ANALYSIS OF PROCESS DATA 749
James A. Burkhardt, Olga Delvecchio, Quality and Productivity Improvement, Stelco Technical Services Ltd., Burlington, Ontario, Canada
LCS: 500:70:434

A PICTURE IS WORTH 10,000 STATISTICS 755
Annabeth L. Propst, Process Management Institute, Inc., Bloomington, MN
LCS: 553:00:000

STATISTICAL PROCESS CONTROL IN THE FOOD INDUSTRY— MANAGING THE CONFLICT BETWEEN NET WEIGHT AND CALORIES 761
Perry C. Caranicas, Inter/Quality Corp., Minneapolis, MN
LCS: 120:70:420

3.1.3—Inspection

INSPECTION IN THE NINETIES: BACK TO CRAFTSMANSHIP 765
William H. Sherman, Western Hemisphere Hilti, Inc., Tulsa, OK
LCS: 020:70:400

CONTINUOUS IMPROVEMENT—AT&T QA AUDITS 772
Patricia A. Lane, AT&T, Orlando, FL
LCS: 345:10:400

3.1.4—Chemical & Process Industries

SPC IN THE SHORT RUN 776
John T. Burr, Rochester Quality Associates, Churchville, NY
LCS: 111:70:428

RETURN TO CHAOS 781
Bruce K. McGill, Eastman Kodak Co., Windsor, CO
LCS: 020:90:000

3.1.5—Quality Auditing

QUALITY AUDITS START SMALL—CONTINUALLY IMPROVE 793
John H. Farrow, Industrial Engineering Program, Milwaukee School of Engineering Milwaukee, WI
LCS: 345:10:000

IMPROVING YOUR QUALITY AUDITING SYSTEMS 797
Catherine A. Williams, AT&T, Orlando, FL
LCS: 345:70:400

THREE STEPS TO CONTINUOUS IMPROVEMENT 800
Archie E. Bice, Consolidated Diesel Co., Whitakers, NC
LCS: 345:70:000

3.1.6—Aviation, Space & Defense Panel

TOTAL QUALITY MANAGEMENT IN THE DEPARTMENT OF DEFENSE 806
Jack Strickland, Peter Angiola, Department of Defense, The Pentagon, Washington, DC

EPA'S QUALITY IMPROVEMENT PROGRAM FOR ENVIRONMENTAL DATA OPERATIONS 812
Stanley M. Blacker, U.S. Environmental Protection Agency, Washington, DC
LCS: 301:10:991

3.1.7—Computer Information Systems

AN INTEGRATED TREND ANALYSIS AND REPORTING SYSTEM 820
H.J. Fu, Charles M. Haggerty, Gary D. Clairmont, Knowledge Integrated Tools and Systems, Digital Equipment Corp., Shrewsbury, MA
LCS: 110:70:400

TEACHING SPC WITH THE AID OF COMPUTER SIMULATION 829
Robert English, Purdue University, W. Lafayette, IN
Dean E. Beutel, Caterpillar Inc., Joliet, IL
LCS: 100:70:000

DESIGNING QUALITY INFORMATION SYSTEMS 835
Craig W. Whitbeck, AT&T Technologies, Inc., Network Systems, Oklahoma City, OK
LCS: 640:70:000

3.2.1—Quality Management

ACHIEVING TOTAL QUALITY ASSURANCE THROUGH THE INSTITUTIONALIZATION OF INCREMENTAL INNOVATION 842
Kenneth R. Jennings, Air Force Institute of Technology, Wright-Patterson AFB, OH
LCS: 310:10:000

A SCIENTIFIC APPROACH TO QUALITY IN R&D 848
George J. Kidd Jr., Materials and Chemistry Technology Dept., Martin Marietta Energy Systems, Inc., Oak Ridge, TN
LCS: 020:70:889

CONTINUOUS IMPROVEMENT: MASTER CHECK-LIST 854
Subhash C. Puri, Agriculture Canada, Ottawa, Ontario, Canada
LCS: 310:00:000

3.2.2—Metrology

CONTINUOUS IMPROVEMENT DEPENDS ON MEASUREMENTS 862
George Rosenzweig, G.R. Technologies Ltd., Toronto, Ontario, Canada

1001 QUESTIONS YOU NEVER ASKED ABOUT METROLOGY 872
Rolf B.F. Schumacher, Rockwell International Corp., Anaheim, CA
LCS: 710:10:000

3.2.3—Quality Management

A TRIP TO JAPAN IS NOT NECESSARY 878
A. Donald Stratton, Storage Tech. Corp., Louisville, CO
LCS: 310:10:000

QUALITY TRAINING AND CREATIVE PROBLEM SOLVING BEGIN IN SCHOOL 882
J. Stephen Sarazen, General International Area Manufacturing and Engineering, Digital Equipment Corp., Marlboro, MA
LCS: 680:00:000

ARE WE COMMUNICATING OR CONFUSING? 886
Robert W. Beynon, Mereen-Johnson Machine Co., Minneapolis, MN
LCS: 323:10:000

3.2.4—Chemical & Process Industries

ZONE CONTROL CHARTS FIND NEW APPLICATIONS 890
Alfred H. Jaehn, Consolidated Papers, Inc., Wisconsin Rapids, WI
LCS: 111:70:400

SPC AND THE JOB SHOP—STRANGE BEDFELLOWS? 896
Lindsay A. Thompson Jr., G.E. Co., GEAE, Cincinnati, OH
LCS: 100:70:000

NITROGLYCERIN SPC: DON'T SAY "OUT OF CONTROL" 902
Robert W. Reip, Hercules Inc., Kenvil, NJ
LCS: 111:70:419

3.2.5—Quality Auditing

A FORMULA FOR CONTINUED IMPROVEMENT: AUDIT FOLLOW-UP 907
Joseph H. Maday Jr., Pacific Northwest Lab., Richland, WA
LCS: 345:70:991

SELF AUDITING IN A CONTINUOUS IMPROVEMENT CULTURE 912
Gregory K. Pasco, Intel Corp., Folsom, CA
Vivian S. Brown, Intel Corp., Santa Clara, CA
LCS: 345:70:000

IMPROVEMENT THROUGH DIFFERENT FORMS OF THE AUDIT 916
Dennis R. Arter, TICOMP, Pasco, WA
LCS: 345:70:000

3.2.6—Product Safety & Liability Prevention
Tutorial

AN OVERVIEW OF FEDERAL AND STATE LEGISLATIVE DEVELOPMENTS IN TORTS AND PRODUCT LIABILITY 922
Honorable Warren W. Eginton, U.S. District Judge, Bridgeport, CT
LCS: 345:00:000

SPEAKERS/AUTHORS INDEX

Aboura, Khalid 527
Agerup, Claes C. 588
Albrecht, Donna M.J. 383
Alexander, Melvin T. 140
Amon, Vicki N. 347
Angiola, Peter 806
Applegate, Jeanne E. 575
Arter, Dennis R. 916
Aubrey, Charles A. II 600
Bajaria, H. J. 416
Baranowski, Judith A. 218
Barker, Anne M. 490
Barker, Thomas B 244
Bednarczyk, Betty L. 41
Berg, Douglas L. 178
Beri, Bhisham K. 509
Beutel, Dean E. 829
Beynon, Robert W. 886
Bice, Archie E. 800
Birch, William A. 725
Blacker, Stanley M. 812
Bolton, Caroline 312
Bothe, Davis R. 265
Box, G.E.P. 78,244
Braun, Ronald L. 285
Brown, F.X. 444
Brown, Vivian S. 912
Burkhardt, James A. 749
Burr, John T. 776
Bushar, Harry F. 196
Caffrey, Stephen J. 661
Cantello, Frank X. 28
Caplan, Frank 694
Caranicas, Perry C. 761
Chakravarty, Sadhan C. 260
Chalmers, John E. 28
Chang, C. Alec 502
Chiacchierini, Richard P. 196
Chou, Kuo-Chong 502
Chugh, Navin 424
Chung, Jin U 655
Clairmont, Gary D. 820
Coleman, John I. 575
Collins, Brendan M. 347
Collins, Frank C. Jr. 706
Cook, Hardy M. Jr. 638
Cramer, Harlan C. 719
Dagnino, Basilio V. 191
Dahlgaard, Jens J. 460
Daughtrey, H.T. 284
Davis, Alvin H. 117
Davis, Charles E. Jr. 700
de Jong, Kent 546
Delvecchio, Olga 749
Deonier, Carol J. (Salusso) 371
Dewar, Donald L. 149
Dilts, David M. 317
Dingus, Victor R. 688
Dingwall, Richard B. 710
Dmytrow, Eric D. 347
Dobbins, Richard K. 444
Duell, Martin J. 710
Dupin, Michael W. 661
Duyck, T.O. 676
Early, John F. 2
Eginton, Warren W. 922
Emrick, Jonathan E. 103
English, Robert 829
Fallah, M. Hosein 428
Farrow, John H. 793
Fiero, Janet D. 725
Fisher, Robert D. 218
Fu, H.J. 820
Gabel, Stanley H. 661
Gan, Fah Fatt 129
Garcia, Chris 643
Gatchalian, Jose C. 470
Gatchalian, Miflora M. 470
Getty, Robert L. 700
Glenn, Gary M. 648
Gruska, Gregory F. 60
Haggerty, Charles M. 820
Hart, Roger D. 333
Hasten, Bradley A. 391
Heaphy, Maureen S. 184
Hempel, Harold E. III 218
Herman, John T. 670
Hoerl, Roger W. 655
Houser, William F. 481
Hudson, Todd G. 255
Huston, Jay T. 74
Huxsoll, Jean F. 201
Imelmann, Wilfried 339
Jaehn, Alfred H. 890
Jamieson, Archibald 277
Jennings, Kenneth R 842
Johnson, Stanley G. 10
Joiner, Laurel W. 78
Jones, Melissa J. 396
Kacker, Raghu 244
Kamikubo, Hitoshi 229
Kaminsky, Frank C 255
Kanji, G.K. 580
Kern, Jill Phelps 155
Kidd, George J. Jr. 848
Kildahl, David D. 95
King, Robert E. 476
Kingen, Ronald G. 99
Kirstein, Henning 408
Kurzen, Mark R. 661
La Bat, Karen L. 377
Lane, Patricia A. 772
Latzko, William J. 731
Lawton, Robin L. 607

SPEAKERS/AUTHORS INDEX (CONT.)

Libman, Ardwin S. 299
Ling, William N. 391
Little, Kevin 625
Lowe, Theodore A. 169
Lynch, Barbara F. 743
Macklin, Christine 140
Maday, Joseph H. Jr. 907
Markowski, Raymond S. 516
Marts, Terri L. 737
Materne, David 162
McBean, Gerald M. 169
McCabe, William J. 682
McGill, Bruce K. 781
McLinn, James A. 538
McRobb, Robert M. 466
Meisel, Robert M. 661
Melan, Eugene H. 109
Miller, Owen W. 502
Mundel, August B. 190
Murine, Gerald E. 292
Murray, Paul S. 433
Murthy, Vyasaraj V. 533
Nader, Gary J. 14
Negus, David P. 41
Nielsen, Niels 588
Pasco, Gregory K. 912
Pence, John L. 213
Persico, John 41
Plsek, Paul E. 484
Propst, Annabeth L. 755
Pugh, G. Allen 496
Puri, Subhash C. 854
Reip, Robert W. 902
Reynard, Sue 235
Rohan, Sue 78
Rosenzweig, George 862
Roslund, Jerry L. 619
Russell, Grant W. 317
Salusso-Deonier, Carol J. 371
Sarazen, J. Stephen 882
Scholtes, Peter R. 235
Schoonmaker, Amanda L. 249
Stewart, Nick P. 552
Stimson, Richard A. 569
Stott, Daniel R. 439
Stratton, A. Donald 878
Stravinskas, J.M. 91
Strickland, Jack 806
Stroad, Malcolm D. 564
Stubbs, Norris 323
Taguchi, Genichi 244
Thompson, Dianne M.M. 428
Thompson, Lindsay A. Jr. 896
Trauth, Sharon L. 546
Van Gilder, John F. 271
Verderosa, Michael A. 521
Vlach, Kenneth 306
Wadsworth, Harrison M. 189
Ward, Roger A. 347
Warren, Jim 65
Weir, George L. 223
Weiss, Lonnie S. 235
Whitbeck, Craig W. 835
Williams, Catherine A. 797
Winchell, William O. 312,424
York, Gregory N. 218
Young, J.C. 34
Zhang, Gongxu 594
Ziegler, August H. 207
Zultner, Richard E. 558
Schumacher, Rolf B.F. 872
Searstone, K. 580
Sensenbrenner, F. Joseph 78
Shal, Mark 632
Sherman, William H. 765
Sikorsky, Charles 323
Singer, Carl A. 402
Singpurwalla, Nozer D. 527
Slahetka, Ronald 306
Soyer, Refik 527
Spaulding, Marc L. 614
Spiers, Beryl 22
Spiring, Fred A. 123
Spurgeon, Susan P. 719